

## Shayan Huda Chowdhury

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### EDUCATION Columbia University, New York, NY: BA - Data Science & Public Policy

Expected Graduation: 2025

Previous: Stuyvesant High School, New York, NY

Graduation: 2019

Honors & Awards: Climate Reality Corp Leadership Award by fm. U.S. Vice President Al Gore ('22), Columbia University Distinguished New Student Scholarship ('22), Daniel Bergstein Memorial Scholarship ('19), AP Scholar w/ Distinction ('19), Gates Scholarship Finalist ('19), Elizabeth Piper Scholarship ('18), Stand Up to Cancer Award for Lung Cancer Research at the New York Genome Center and Weill Cornell Medical College ('17)

### EXPERIENCE

#### Research Assistant, Fifer Lab, Columbia University Irving Medical Center, New York

August 2021 – present

- Building self-supervised machine learning models for clinical usage in detecting stress patterns in electrocardiogram (ECG) data for early diagnosis and prevention of adverse fetal health outcomes like stillbirths and miscarriages
- Developed a novel signal processing algorithm to separate out maternal and fetal ECG signals from abdominal ECG data
- Invited to meet First Lady Dr. Jill Biden and Queen Letizia of Spain for the Cancer Moonshot Initiative ceremony at the Irving Cancer Center

#### Executive Director & Founder, Reach4Help, Montréal, Canada

March 2020 – present

- Leading Reach4Help, a tech nonprofit connecting people in need to trusted volunteer help across 38+ countries
- Managing a team of 30 to design, build and provide support for open-source software for grassroots nonprofit organizations
- Developed a need-matching web platform to coordinate food banks, clothing drives and vaccinations for 6K+ low-income communities
- Developed a global map of 10K+ aid organizations, serving as the backbone for logistical coordination of volunteer help through the COVID-19 pandemic, Mexican earthquake, California wildfires, Ukrainian invasion, Pakistan+Bangladesh floods, etc.
- Raised \$120K from Google for Nonprofits and \$106K in in-kind donations from Google, Slack, Algolia, etc.
- Collaborated with the World Economic Forum's Global Shapers in Europe to raise €170K+ for Ukraine medical aid relief
- Collaborated with BRAC, JAAGO Foundation and other NGOs to serve 58K+ households during the 2022 Bangladesh and Pakistan floods

#### Global Shaper & Climate Reality Corp Leader, World Economic Forum, Geneva, Switzerland

August 2021 – present

- Selected as the youngest Global Shaper by the World Economic Forum for work on Reach4Help
- Coordinated SupportUkraineNow (SUN) projects involving refugee aid, fundraising and mental health support as U.S. co-ambassador
- Invited to meet U.S. Special Presidential Envoy for Climate and fm. Secretary of State John Kerry at the New York Times' Climate Forward event
- Won a grant from to scale up education policy solutions for 1800+ students in Bangladesh

#### Director of Mentorship and Education, Collaborative Visualization Team, Harvard University, Cambridge, MA

October 2022 – present

- Connecting 280+ research students to professors and principal investigators at Columbia, Harvard, and other institutions
- Coordinating workshops on research, data analysis, and technical writing with speakers from Google, Columbia Data Science Institute, etc.

#### Lead Data Analyst, a2i Programme, ICT Ministry / Cabinet Division / UNDP Bangladesh

March 2020 – January 2022

- Appointed as a member of the National COVID-19 Policy Dashboard Committee of the Bangladesh Ministries of Health and IT
- Developed COVID-19 data collection tools and modeled its spread to inform public policy on lockdowns, public health comms and healthcare decisions
- Analyzed data on tests, cases, deaths, hospitalizations, and mobility for the Directorate General of Health Services and Institute of Epidemiology with epidemiologists and data scientists from Harvard, MIT, Columbia and UC Berkeley

#### Software Developer, Migrant Nation Foundation, The Netherlands / UNDP Bangladesh

October 2019 – June 2020

- Developed a pioneering "Right to Work" e-Commerce marketplace for Rohingya refugees with UNDP, UNHCR, and WFP in Bangladesh to enable them to produce and sell products to consumers worldwide on Amazon, Etsy, Alibaba, and other international markets
- Built a mobile app being used in the camps to pay hourly wages in accordance with the ILO's decent work practices

#### Research Intern, Frank Lab: Nobel Laureate Joachim Frank, Columbia University, New York

September 2018 – November 2019

- Created the highest resolution 3D reconstruction of 40S eukaryotic ribosome subunit to reverse engineer the mechanism of protein synthesis
- Fine-tuned bioinformatics tools to increase the accuracy of protein detection and reconstruction in noisy electron microscope images at 1.5 Å

#### Machine Learning Project Lead, Google Mentorship Program, Google, New York

October 2018 – June 2019

- Led a Stuyvesant HS team on a LSTM-based machine learning project to understand human emotions from voice intonations to develop digital personal assistants for administrative use, medical applications, speech disabilities, etc.

**PROGRAMMING / LANGUAGES:** Python, R, JavaScript/TypeScript, MATLAB, Java, C#, C++, Rust, Dart, SQL / Bangla (native), Spanish and Latin (int.)

### SELECTED RESEARCH PUBLICATIONS

- Chowdhury S., Frasca M. G., Wu H., Lucchini M., Shuffrey L. C., Sania A., Malette C., Odendaal H. J., Myers M. M., Fifer W. P., Pini N. (2022). [A Novel Method for the Extraction of Fetal ECG Signals from Wearable Devices](#). 44th Int'l IEEE Engineering in Medicine & Bio Conf. (EMBC).
- Mahmud, A. S., Chowdhury, S., Sojib, K. H., Chowdhury, A., Quader, M. T., Paul, S., ... & Buckee, C. O. (2021). [Participatory syndromic surveillance as a tool for tracking COVID-19 in Bangladesh](#). *Epidemics*, 35, 100462.
- Chadwick, F., Clark, J., Chowdhury, S., ... & Sania, A. (2022). [Combining Rapid Antigen Testing and Syndromic Surveillance Improves Sensitivity and Specificity of COVID-19 Detection: A Community-Based Prospective Diagnostic Study](#). *Nature Communications*, 13, 2877.
- Ferguson E. A., Brum, E., Chowdhury, A., Chowdhury, S., Kundegorski, M., ... & Hampson, K. (2022). [Modelling how face masks and symptoms-based quarantine synergistically and cost-effectively reduce SARS-CoV-2 transmission in Bangladesh](#). *Epidemics*, 40, 100592.
- Brum, E., Saha, S., Sania, ..., Chowdhury, S., Haddou, Y., Ferguson, E., Kundegorski, M., Purno, N., Tasneem, M., ... Hampson, K. (2021). [Surging COVID-19 in Bangladesh driven by B.1.351 variant](#). *Preprint for Lancet Global Health*.

### SPEAKERSHIPS & PRESS COVERAGE

- Invited to speak at [The Aspen Institute's Future Leaders Climate Summit](#) in Miami, Florida on climate change public policy advocacy Mar 2023
- Invited to attend the [MIT Sloan Healthcare and BioInnovations Conference](#) in Cambridge, Massachusetts on research and biotech Feb 2023
- Invited to speak at the [World Economic Forum Annual Meeting](#) in Davos, Switzerland on Reach4Help's data-driven crisis aid allocation Jan 2023
- Presented as lead author at the [International Society for Developmental Psychobiology \(ISDP\) Conference](#) in San Diego, California Nov 2022
- Spoke on ["The Roadmap to Resources: How Reach4Help Leads People in Need"](#) at Google HQ in Mountain View, California Oct 2022
- Spoke at the [Climate Changemakers Digital Innovation for Youth Conference](#) at the United Nations Headquarters in New York Sep 2022
- Spoke at the [International Youth Conference](#) in Cambridge, Massachusetts on entrepreneurship and public policy advocacy Sep 2022
- Presented as lead author at the [44th Int'l IEEE Engineering in Medicine & Biology Conference \(EMBC\)](#) in Glasgow, Scotland Jul 2022
- Covered in a news article by [The Daily Star](#), the most widely circulated newspaper in Bangladesh Mar 2022